

CLAIMS

What is claimed is:

1. A golf club head comprising:
a body made of a first material having a front face of variable stiffness, and a rear cavity extending rearward from the front face;
a composite core comprised of a second material less dense and more flexible than the first inserted into the rear cavity; and
the composite core inflated and expanded by a pressurized gas wherein at least a portion of the composite core biasly juxtaposes against the front face to form a hollow body having an internal volume between 35cc to 50cc.
2. The club head of claim 1, wherein the composite core is made from a lightweight material such as plastic or carbon graphite.
3. The club head of claim 2, wherein the composite core material has a density equal or less than 4.5 gm/cc.
4. The club head of claim 1, wherein the stiffness of the front face is greatest at the face center, and becomes progressively more flexible away from the face center.
5. The club head of claim 1, wherein the Coefficient of Restitution varies across the front face to normalize ball speed and provide for an enlarged sweet zone.
6. The club head of claim 5, wherein the maximum Coefficient of Restitution, ranges between about 0.8 to about 0.9.
7. The club head of claim 1, wherein the pressurized gas is air.

8. The club head of claim 1, wherein the rear cavity comprises an opening that is sealed by a visible portion of the composite core.
9. The club head of claim 1, wherein the elasticity of the material of the composite core may cooperate with the front face to create a varying COR across the front face for normalizing ball speed and creating an enlarged sweet zone.
10. A golf club head comprising:
 - a body made of a first material and formed with a variable stiffness front face, and a rear cavity extending rearward from the front face; and
 - a composite core assembly made of a second material less dense than the first and securely received in the rear cavity and biased by tension so as to cause the front face to be structurally supported.
11. The club head of claim 10, wherein the composite core assembly is made from a lightweight material such as plastic or carbon graphite.
12. The club head of claim 10, wherein the material of the composite core assembly is of a density equal or less than 4.5 gm/cc.
13. The club head of claim 10, wherein the stiffness of the front face is greatest at the face center, and becomes progressively more flexible away from the face center.
14. The club head of claim 10, wherein the Coefficient of Restitution varies across the front face to normalize ball speed and provide for an enlarged sweet zone.
15. The club head of claim 14, wherein the maximum Coefficient of Restitution across the front face ranges between about 0.8 to about 0.9.
16. The club head of claim 10, wherein the rear cavity comprises an opening that is sealed by a visible portion of the composite core assembly.

17. The club head of claim 10, wherein the stiffness of the composite core assembly material, juxtaposed against and supporting the front face, may be varied to provide a front face of varying COR to normalize ball speed across the front face.

18. A metal wood golf club head comprising:

a body having a hollow cavity and at least one opening, the body made of a first material and a front face of variable stiffness;

a composite core comprised of a second material less dense than the first inserted into the cavity; and

the composite core inflated and expanded by a pressurized gas wherein at least a portion of the composite core juxtaposes against the front face to provide support; and

the hollow cavity having an internal volume between 300cc to 400cc.

19. The club head of claim 18, wherein the internal volume is between about 150cc to 225cc.

20. The club head of claim 18, wherein the composite core is made from a lightweight material such as plastic or carbon graphite.

21. The club head of claim 18, wherein the composite core material has a density equal or less than 4.5 gm/cc.

22. The club head of claim 18, wherein the rear cavity comprises an opening that is sealed by a visible portion of the composite core.